

5.6 TRAFFIC AND CIRCULATION

This section of the EIR is an analysis of potential traffic impacts associated with future development that could occur with implementation of the proposed Ponto Beachfront Village Vision Plan. The analysis evaluates the existing and future traffic and circulation patterns and conditions that would occur with and without implementation of the proposed Vision Plan. The information provided in this section is based on the Traffic Constraints Study prepared for the Vision Plan, which was prepared by RBF Consulting in March 2007; refer to Appendix G.

The analysis was prepared in compliance with the following local, regional and state agencies and guidelines.

- City of Carlsbad, Growth Management Plan;
- San Diego Traffic Engineering Council/Institution of Transportation Engineers (SANTEC/ITE);
- County of San Diego; and,
- San Diego Association of Governments (SANDAG).

The methodology used to evaluate traffic impacts is described in detail in the traffic analysis; refer to Appendix G. Below is a brief summary of the methodology:

- Travel forecasts and trip generation for the proposed project was based on SANDAG trip generation rates in accordance with SANTEC/ITE traffic study guidelines.
- Traffic forecasts for the year 2030 were modeled from the North County Subarea Model, based on the SANDAG Series 10 model.
- Intersection Capacity Utilization (ICU) method described in the Carlsbad Growth Management Plan and the 2000 Highway Capacity Manual (HCM) were the basis for evaluating existing and future Level of Service (LOS) of the roadway intersections within the study area.
- SANTEC/ITE guidelines for road classifications and capacity thresholds were used to determine existing and future LOS for local and regional roadway segments.

5.6.1 Existing Conditions

5.6.1.1 Roadway Network

The major freeways and streets that would serve the Ponto Area include Interstate 5 (I-5), Carlsbad Boulevard, Aviara Parkway, Paseo Del Norte, Avenida Encinas, Palomar Airport Road, Poinsettia Lane, La Costa Avenue, and Ponto Drive. These roadways are described below:

Interstate 5 (I-5) provides regional access to the City of Carlsbad and to the Ponto Beachfront Village as a major freeway facility, generally oriented in a north-south direction. Regional access is provided at the Poinsettia Lane and La Costa Avenue interchanges with I-

5. Additional interchanges to I-5 that could serve the project to the north include Palomar Airport Road and Cannon Road.

Carlsbad Boulevard is designated as a four-lane major arterial in the City Circulation Element and is generally oriented in a north-south direction. Carlsbad Boulevard provides a parallel alternative to Interstate 5 and is the western boundary of the Ponto Beachfront Village. As part of the Ponto Beachfront Village Vision Plan, Carlsbad Boulevard will be realigned. Carlsbad Boulevard will remain a four-lane roadway with a raised median and on street parking. Carlsbad Boulevard will provide direct access to the proposed Ponto Beachfront Village Vision Plan at two locations: Beach Way and Ponto Drive. Both intersections are forecast to be signalized and may have u-turn capabilities to accommodate beach traffic.

Aviara Parkway is designated as a four-lane secondary arterial south of Poinsettia Lane in the City Circulation Element. Aviara Parkway extends from Palomar Airport Road to El Camino Real and provides access to the Four Seasons Resort and Aviara Golf course east of the Ponto Beachfront Village Vision Plan site. Both are major attractors within in the study area. North of Palomar Airport Road, Aviara Parkway transitions to College Boulevard, which is classified as a major arterial. East of El Camino Real, Aviara Parkway transitions to Alga Road, which is classified as a major arterial.

Paseo Del Norte is designated as a two- to four-lane secondary arterial in the City Circulation Element that extends from Cannon Road to Poinsettia Lane parallel to Interstate 5.

Avenida Encinas is designated as a secondary roadway within the City Circulation Element and is oriented in a north-south direction. Between Cannon Road and Palomar Airport Road, Avenida Encinas is a four-lane roadway. South of Palomar Airport Road, Avenida Encinas is a two-lane roadway to Poinsettia Lane. South of Poinsettia Lane to Windrose Circle, four lanes are currently provided along Avenida Encinas, which again tapers to two lanes south of Windrose Circle to Carlsbad Boulevard. Access to the Ponto Beachfront Village will be provided at Ponto Drive/Avenida Encinas. Both Ponto Drive and Avenida Encinas will pass the through the property and connect to Carlsbad Boulevard at signalized intersections.

Palomar Airport Road is a six-lane divided roadway, generally oriented in an east-west direction. Palomar Airport Road is a Regionally Significant Arterial (RSA) as classified by the County of San Diego Congestion Management Program. It extends from Carlsbad Boulevard through Carlsbad where it transitions to San Marcos Boulevard, terminating at Mission Avenue in San Marcos. According to the City Circulation Element, Palomar Airport Road is classified as a six-lane prime arterial.

Poinsettia Lane is a four-lane major arterial located south of Palomar Airport Road and is oriented in an east-west direction. It extends from Carlsbad Boulevard to the west to Cassia Road, and is discontinuous to Skimmer Court. This segment of Poinsettia Lane is anticipated to be complete by the year 2010.

La Costa Avenue is classified as a four-lane major arterial west of El Camino Real. East of El Camino Real it is a 2-lane secondary arterial to Camino de los Coches.

Ponto Drive is designated as a two-lane collector and is oriented in a north-south direction. Although Ponto Drive is not currently a through street from Carlsbad Boulevard to Avenida

Encinas, it does intersect at both streets. Ponto Drive currently intersects with Carlsbad Boulevard on the northern Ponto Beachfront Village boundary and is a signalized intersection. The intersection of Ponto Drive and Avenida Encinas is unsignalized, but is recommended for signalization with the proposed Ponto Beachfront Village Vision Plan.

5.6.1.2 Study Area

The study area was defined based on the distribution of trips associated with land use intensity as described in the Ponto Beachfront Village Vision Plan on the roadway network. Distribution data was obtained by modeling a select zone assignment using North County Subarea model based on the SANDAG Series 10 traffic model. The study area for the project consists of 34 intersections and 20 roadway segments located within the vicinity of the proposed Vision Plan.

The list of study intersections for the traffic analysis was determined based on discussions with City staff and SANTEC/ITE and San Diego County Congestion Management Plan (CMP) guidelines. All CMP intersections with more than 50 peak hour trips and/or other intersections known to be at risk of future failing operations were included in the study area. The study intersections are provided on Figure 5.6-1.

5.6.1.3 Data Collection

To determine the existing conditions, peak hour intersection movement counts were obtained from the City of Carlsbad through the 2006 City of Carlsbad Traffic Monitoring Program (TMP). In addition to the TMP data, intersection turning movement counts were collected in July 2006 at 10 additional intersections. The intersection movement counts were taken on a typical weekday during the AM (7:00 to 9:00 a.m.) and PM (4:00 to 6:00 p.m.) peak periods. Detailed count data is contained in Appendix A of Appendix G. In addition, weekday daily traffic counts were collected at 13 locations. Existing ADT volumes are provided in Figure 5.6-2. Figures 5.6-3 and 5.6-4 show existing AM and PM peak one-hour volumes at each of the study intersections.

The Carlsbad community voiced concerns that summer weekend traffic typically exceeded weekday peak hour volumes, particularly along the coast where tourism has an impact on traffic flow. Therefore, a preliminary assessment of weekend versus weekday traffic volumes was conducted. Weekend daily traffic counts were collected at 11 locations, and it was found that weekday traffic volumes collected during the summer were consistently higher than summer weekend traffic volumes both over a 24-hour period and during the peak periods. Weekday intersection operations typically reported worse levels of service when compared to weekend levels of service. Weekend versus weekday comparison worksheets are provided in Appendix B of Appendix G.

5.6.1.4 Level of Service

Traffic conditions are generally described in terms of Level of Service (LOS). LOS is measured in a scale ranging from LOS A to LOS F. LOS A is characterized by free-flow traffic conditions where drivers are virtually unaffected by the presence of other drivers on the road. LOS F is characterized by stop-and-go traffic, poor travel times, low comfort and

convenience, and increased accident exposure. The City of Carlsbad classifies LOS in terms of acceptable (LOS A and B), marginal (LOS C and D) and failing (LOS E and F).

5.6.1.5 Existing Conditions Intersection Levels of Service

A total of 34 study area intersections were analyzed in the analysis for the proposed project. The study intersection operations were analyzed using the Intersection Capacity Utilization (ICU) method. The ICU method uses intersection movement volumes and per lane capacity to determine the volume-to-capacity (V/C) ratio of the intersection.

Intersection movement volumes for each intersection were determined by current traffic data in the 2006 City of Carlsbad Traffic Monitoring Program and additional traffic counts collected in July of 2006. The existing peak hour movement volumes for the study intersections are provided in Exhibit 4 of the traffic analysis; refer to Appendix G.

The capacities of the intersection movements were determined based on the following standards:

- 1,800 vehicles-per-hour (vph) for each left turn lane;
- 2,000 vph for each through-lane; and,
- 1,800 vph for each right-turn lane.

Based on the above standards and the existing intersection geometries, the capacities of the intersection movements were calculated. The V/C ratio was then calculated by dividing the intersection movement volumes by the intersection movement capacities.

The intersection LOS is based on the sum of the critical movements or the total intersection V/C ratio. The following V/C ratios are used to determine the LOS of the intersection:

- V/C of 0.00 to 0.60: LOS A
- V/C of 0.61 to 0.70: LOS B
- V/C of 0.71 to 0.80: LOS C
- V/C of 0.81 to 0.90: LOS D
- V/C of 0.91 to 1.00: LOS E
- V/C over 1.00: LOS F

The existing LOS of the study intersections for the AM and PM peak hours is summarized in Table 5.6-1. The results of the analysis show that all study intersections currently operate at an acceptable LOS (LOS A or B) or a marginal LOS (LOS C or D), based on the ICU methodology; refer to Table 5.6-1. The existing AM and PM LOS of the study intersections is graphically illustrated on Figures 5.6-3 and 5.6-4.

5.6.1.6 Existing Conditions Street Segment Analysis

The existing conditions Street Segment Analysis included a Peak Hour Segment Analysis. The LOS of the street segments within the study area were determined by calculating volume-to-capacity ratio (V/C) of the street segments. The V/C of a street segment is

calculated by dividing the peak hour traffic volume (or average daily traffic volume) of the street segment by the peak hour capacity (or daily capacity) of the street segment. The following V/C ratios determine the LOS of the street segment:

- V/C of 0.00 to 0.60: LOS A
- V/C of 0.61 to 0.70: LOS B
- V/C of 0.71 to 0.80: LOS C
- V/C of 0.81 to 0.90: LOS D
- V/C of 0.91 to 1.00: LOS E
- V/C over 1.00: LOS F

The results of the Peak Hour Roadway Segment Analysis are provided in Table 5.6-2. All roadway segments included within the study area currently operate at an LOS of B or better.

The peak hour capacity of a street segment is determined by multiplying the number of vehicle lanes by 1,800 vehicles per hour. The daily capacity of a street segment is based upon the classification of the roadway and capacity thresholds defined in the SANTEC/ITE Guidelines. Peak hour and daily traffic volumes were determined by current traffic data in the 2006 City of Carlsbad TMP and additional traffic counts collected in July of 2006.

5.6.2 Threshold for Determining Significance

Based upon Appendix G of the CEQA Guidelines, a project would normally have a significant adverse traffic impact if it results in any of the following evaluation criteria:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections); or,
- Exceed, either individually or cumulatively, a level of service standard established by the County congestion management agency for designated roads or highways.

In addition to the threshold measures stated above, the following guidelines and standards specified by the City of Carlsbad and SANTEC/ITE were also considered to identify significant impacts resulting from the proposed project:

- The addition of trips generated by the land uses proposed in the Vision Plan results in a change in operating conditions from acceptable to deficient; or,
- When an intersection or roadway segment is operating at deficient service levels, the addition of trips generated by the proposed land use in the Vision Plan results in a change in V/C ratio of more than 2% (0.02) when compared to the no-build Vision Plan condition for roadway segments or intersections evaluated using the ICU methodology. For future year scenarios, an increase in delay of more than 2.0 seconds at a deficient intersection would result in a significant impact.

5.6.3 Environmental Impacts

The potential traffic impacts associated with the proposed Vision Plan were evaluated under the following six scenarios in compliance with the City of Carlsbad and SANTEC/ITE guidelines.

1. **Existing Conditions** – Existing traffic volumes evaluated with the existing intersection geometry (refer to Section 5.6.1.5 and 5.6.1.6).
2. **Existing plus Vision Plan Conditions** – Forecast Ponto Beachfront Village traffic volumes added to the existing conditions traffic and evaluated with the existing intersection geometry (refer to Section 5.6.3.3).
3. **Near Term (2010) without Vision Plan** – Forecast year 2010 traffic volumes evaluated with 2010 future intersection geometry (refer to Cumulative Impact Analysis in Section 7.1.7).
4. **Near Term (2010) with Vision Plan** – Forecast year 2010 traffic volumes with proposed Ponto Beachfront Village forecast trips. Evaluated with 2010 future intersection geometry (refer to Cumulative Impact Analysis in Section 7.1.7).
5. **Horizon Year (2030) without Vision Plan Conditions** – Forecast 2030 traffic volumes with existing Ponto Area land uses evaluated with 2030 future intersection geometry (Traffic Impact Fee improvements). Refer to Section 5.6.3.4.
6. **Horizon Year (2030) with Vision Plan Conditions** – Forecast 2030 traffic volumes with proposed Ponto Vision Plan evaluated with 2030 future intersection geometry (Traffic Impact Fee improvements). Refer to Section 5.6.3.4.

5.6.3.1 Trip Generation

To determine the trips forecast to be generated by future development of the Ponto Area, as described in the proposed Ponto Beachfront Village Vision Plan, SANDAG trip generation rates (April 2002) were utilized in accordance with SANTEC/ITE Traffic Study Guidelines; refer to Table 5.6-3. Under the Ponto Beachfront Village Vision Plan, all existing land uses would gradually be replaced by a mixture of compatible land uses including hotel and resort uses, live/work condominium units, townhomes, apartments, office, retail and restaurants. Access to the Ponto Area would be provided along Carlsbad Boulevard, Ponto Drive and Avenida Encinas. Beach Way is proposed between Ponto Drive and Avenida Encinas. A summary of the anticipated land use types by acreage and number of units is listed in Table 5.6-4. Based on rates provided by SANDAG, the amount of traffic generated by these uses is also provided in Table 5.6-4.

As shown in Table 5.6-4, development of the Ponto Area as described in the Ponto Beachfront Village Vision Plan is forecast to generate approximately 15,161 vehicle trips daily, which includes approximately 964 AM peak hour trips (split 502 inbound and 462 outbound) and approximately 1,244 PM peak hour trips (split 729 inbound and 518 outbound).

It should be noted that the trip generation factors and final forecast generated conservative estimates that did not account for the following reduction factors recommended by SANDAG.

- The land uses included in the Ponto Beachfront Village Vision Plan lend themselves to both pass-by and diverted trips. Pass-by trips correspond to traffic that is currently on the roadway network that will make a stop within the Ponto Beachfront Village. They do not represent new trips on the roadway network, but an interim stop between an existing origin and destination. Diverted trips correspond to traffic currently on the roadway network that may shift from one origin or designation to the Ponto Beachfront Village based on the change of land use planned for this area. Once again, diverted trips are not new trips but redirected trips. Although SANDAG recommends trip reduction factors to account for both diverted and pass-by trips for the land uses, these factors were not applied in the traffic analysis in order to maintain a conservative analysis.
- Many uses planned within the Ponto Area as part of the Vision Plan are also consistent with the County of San Diego's Smart Growth program by balancing residential and commercial uses within a walkable distance. SANDAG recommends a 10 percent reduction in traffic for mixed-use projects that are consistent with the Smart Growth principles and can feasibly demonstrate that alternate modes such as walking, bicycling or transit are available. No trip reduction factors were applied to account for smart growth in order to maintain a conservative approach in the traffic analysis.

The forecast daily traffic based upon the land uses proposed in the Ponto Beachfront Village Vision Plan is consistent within the range of ADT allowed under the existing General Plan. The existing General Plan allows between approximately 12,700 and 15,400 daily trips, as shown in Table 5.6-3.

5.6.3.2 Trip Distribution and Assignment

Study intersections for the Ponto Beachfront Village Vision Plan were determined based on the SANTEC/ITE and County threshold of 50 peak-hour project-generated trips (5% of total forecast PM peak hour volume). To determine trip distribution and assignments, a select zone model run of the Vision Plan traffic analysis zone (TAZ) was performed using the North County Sub-Area traffic model, which is based on the SANDAG Series 10 model. The results of the model run were used to determine the trip distribution percentages throughout the study area. The Vision Plan trip distributions are shown on Figure 5.6-5.

Based on the trip distribution shown on Figure 5.6-5, the trips that would be generated by the land uses proposed by the Vision Plan were assigned to the roadway network. Figures 5.6-6 and 5.6-7 illustrate the AM and PM peak hour traffic volumes associated with the Ponto Beachfront Village Vision Plan for each intersection.

5.6.3.3 Existing Plus Vision Plan Conditions

This section includes an evaluation of the street segments and intersections within the study area under a scenario that combines existing traffic volumes with traffic volumes anticipated

to be generated by land uses envisioned by the Vision Plan. Under this analysis, no off-site future improvements were assumed for the existing street and intersection system.

Existing Plus Vision Plan Intersection Level of Service

To conduct the Existing Plus Vision Plan Intersection Level of Service analysis, the peak hour intersection traffic volumes generated by the proposed Vision Plan were combined with the existing peak hour intersection traffic volumes to determine the Existing Plus Vision Plan Peak Hour Volumes.

The Existing Plus Vision Plan volumes were then evaluated using the ICU methodology. Detailed ICU calculations are provided in Appendix G. Table 5.6-5 summarizes the results of the analysis and determines the LOS of each study area intersection during the peak hours.

As shown in Table 5.6-5 and Figures 5.6-6 and 5.6-7, most intersections are forecast to operate at an acceptable LOS (LOS A or B) under Existing Plus Vision Plan traffic conditions, and the addition of the Ponto Beachfront Village Vision Plan would not result in a significant change in operating conditions when compared to existing conditions. However, the following intersection would operate at a deficient or “failing” LOS (LOS E or F) during the AM and PM peak hours with the proposed Vision Plan:

- La Costa Avenue / Vulcan Avenue

To determine if the Vision Plan’s contribution to the traffic impacts at this intersection is significant, the following threshold applies:

- When an intersection or roadway segment is operating at deficient service levels, the addition of trips generated by the proposed land use in the Vision Plan results in a change in V/C ratio of more than 2% (0.02) when compared to the Without Vision Plan condition for roadway segments or intersections evaluated using the ICU methodology.

Impact T-1 Based on Table 5.6-5, the Vision Plan would not result in a change in the V/C ratio of more than 2% when compared to the existing conditions. However, the proposed Vision Plan would result in significant impacts to the following intersection because traffic volumes associated with the Vision Plan would cause the LOS of the intersection to change from an acceptable/marginal LOS to a deficient (failing) LOS:

- La Costa Avenue / Vulcan Avenue

Street Segment

Peak Hour Segment Analysis

The results of the Existing Peak Hour Segment Analysis under Existing Plus Vision Plan conditions are provided in Table 5.6-6. All of the roadway segments are forecast to operate at an acceptable LOS during the peak hour segment analysis. Therefore, the existing roadway network has sufficient capacity to meet the forecast peak hour traffic associated with the land use designations as proposed in the Ponto Beachfront Village Vision Plan. Impacts would be considered less than significant.

5.6.3.4 Horizon Year (2030) Conditions

This section includes an evaluation of the intersections and street segments within the study area under 2030 conditions.

The Series 10 SANDAG North County Subarea model was used to forecast daily traffic volumes for the Horizon Year 2030 Conditions with the proposed land uses included in the Ponto Beach front Village Vision Plan. Turns reports provided by SANDAG were used in combination with daily forecast volumes to forecast peak hour intersection volumes; refer to Section 7.1.7 for the year 2010 analysis. The Subarea model assumes full build out of the City's Circulation Element roadway network by year 2030, with the following major improvements assumed to be in place in the City of Carlsbad in the near term (prior to 2010):

- Extension of El Fuerte from Palomar Airport Road to Faraday Avenue (2007)
- Construction of Faraday Avenue from El Camino to Melrose Drive (2007)
- Completion of Poinsettia Lane (2010)

The SANDAG 2030 model land use data set was modified to include the Ponto Beachfront Village Vision Plan proposed land use designations. The post-processed peak hour intersection and roadway segment volumes therefore include the Vision Plan. To determine the “without Vision Plan conditions for 2030,” traffic associated with the Ponto Beachfront Village Vision Plan was extracted from the traffic model.

The City of Carlsbad collects fees from developments that support the improvements to existing infrastructure. Fees are collected based on the traffic volumes added by project. Through the City of Carlsbad Traffic Impact Fee (TIF) program, collected fees are used to construct roadway improvements and Capital Improvement Program (CIP) projects that benefit the circulation throughout the City. Improvements identified in the TIF are based on forecast intersection operations for Year 2030. Analysis of the study intersections and roadway segments for the without and with Ponto Vision Plan take into consideration the improvements planned through the TIF.

Under the 2030 analysis, two scenarios were analyzed. The first scenario analyzed 2030 traffic without the land uses proposed by the Vision Plan. For this scenario, it was assumed that the Ponto Area would be developed with uses as defined by the existing General Plan land use designations for the site. The project would generate approximately 15,161 daily trips if the site were developed under the existing General Plan land use designations. Based on a trip distribution and assignment model, peak hour traffic volumes and average daily trip volumes were calculated for the study area intersections and street segments for this scenario (2030 Without Vision Plan); refer to Figures 5.6-8.

The second scenario analyzed 2030 traffic with the land uses proposed by the Vision Plan. The land uses proposed by the Vision Plan would generate approximately 15,161 daily trips. Based on a trip distribution and assignment model, peak hour traffic volumes and average daily trip volumes were calculated for the study area intersections and street segments for this scenario (2030 With Vision Plan); refer to Figure 5.6-9.

For both scenarios, the LOS for the study area intersections was analyzed using the delay-based 2000 Highway Capacity Manual (HCM) methodology for all future conditions. The

HCM methodology describes the operation of an intersection using a range of levels of service (LOS) from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on corresponding average stopped delay per vehicle. The results are discussed below.

Horizon Year (2030) Intersection Level of Service

Table 5.6-7 summarizes the results of the Horizon Year (2030) Peak Hour Intersection LOS - HCM analysis for both scenarios (Without the Vision Plan and With the Vision Plan).

As shown on Table 5.6-7 most intersections would operate at an acceptable (LOS A or B) or marginal LOS (LOS C or D) in the year 2030 under both scenarios (Without the Vision Plan and With the Vision Plan); refer to Figures 5.6-8 through 5.6-11. The following intersections are forecast to operate at a failing or deficient LOS (LOS E or F) under both scenarios (2030 Without Vision Plan and 2030 With the Vision Plan):

- Palomar Airport Road / I-5 Northbound Ramps;
- Palomar Airport Road / El Camino Real;
- Palomar Airport Road / El Fuerte Street;
- Palomar Airport Road / Melrose Drive;
- El Camino Real / Camino Vida Roble;
- La Costa Avenue / Carlsbad Boulevard;
- La Costa Avenue / El Camino Real; and,
- La Costa Avenue / Vulcan Avenue.

To determine if the Vision Plan's contribution to the above impacts are significant, the following threshold applies:

- When an intersection or roadway segment is operating at deficient service levels, the addition of trips generated by the proposed land use in the Vision Plan results in an increase in delay of more than 2.0 seconds when compared to the Without Vision Plan condition.

Impact T-2 As shown in Table 5.6-7, the traffic generated by the Vision Plan would result in a change in delay of more than 2.0 seconds when compared to the 2030 Without the Vision Plan analysis at two intersections:

- La Costa Avenue / Carlsbad Boulevard; and,
- La Costa Avenue / Vulcan Avenue.

Therefore, the Vision Plan's impact on the above intersections would be considered significant and mitigation measures would be required.

Horizon Year (2030) Peak Hour Road Segment Analysis

The results of the 2030 Peak Hour Segment Analysis and Daily Segment Analysis are discussed below.

Peak Hour Street Segments

Peak hour segment LOS was calculated by taking the greatest one-way traffic volume in either direction and dividing that volume by the segment peak hour capacity. A maximum capacity of 1,800 vehicles per hour per lane (vphpl) was used in this calculation, regardless of roadway classification. The LOS thresholds based on V/C ratios for segments are given in Section 5.6.1.6.

Table 5.6-8 summarizes the results of the Horizon Year (2030) Peak Hour Roadway Segment analysis without and with land use designations as described in the Ponto Beachfront Village Vision Plan. The segment capacities are based on the buildout of the City Circulation Element roadway network. Most roadway segments are forecasted to operate at acceptable levels of service by year 2030 without and with the proposed land uses included in the Ponto Beachfront Village Vision Plan. However, the segment of La Costa Avenue from Vulcan Avenue to I-5 is forecast to operate at LOS F in the westbound direction in the PM peak hour. This condition is forecasted to occur without or with the land uses identified in the Ponto Beachfront Village Vision Plan. The City of Encinitas Circulation Element identifies La Costa Avenue as a four-lane arterial through this segment, but has no immediate or long term plans to construct the widening. Widening by one lane in the westbound direction would reduce the V/C ratio to an acceptable operating condition based on City of Carlsbad thresholds; refer to Appendix G.

Caltrans ILV Analysis

Because of the project's proximity to Interstate 5 (I-5), a state-owned facility, six Caltrans ramps were evaluated using the Intersection Lane Volume (ILV) methodology in accordance with Caltrans traffic study requirements. The results of the analysis show that of the six ramps evaluated, five are forecast to operate within the available capacity through 2030 without or with the proposed land use designations included in the Ponto Beachfront Village Vision Plan. The intersection of Palomar Airport Road/I-5 Northbound Ramps is forecasted to operate above capacity in the AM peak hour without or with the land uses identified in the Vision Plan; refer to Table 5.6-9.

5.6.3.5 Carlsbad Boulevard Realignment

Access to the Ponto Area will be provided by Avenida Encinas, Ponto Drive and Carlsbad Boulevard. Signalized access will be provided at Avenida Encinas/Ponto Drive (new signal), Carlsbad Boulevard/Ponto Drive (existing signal) and the future signalized intersection of Carlsbad Boulevard/Beach Way.

As mentioned previously, a realignment study was conducted for Carlsbad Boulevard. Four alternatives were evaluated for potential effects to biology, visual resources, parking, signal operations and bridge requirements, as well as for their potential to achieve the goals of the Vision Plan. The alternatives for realigning Carlsbad Boulevard would involve relocation of either the northbound or southbound lanes between Ponto Drive and Avenida Encinas to create additional area on either side of Carlsbad Boulevard that will allow for improved bicycle lanes, additional trails and/or wider sidewalks and parking. In most cases, the realignment of Carlsbad Boulevard would allow for a pedestrian undercrossing from the

Ponto Beachfront Village Vision Plan area to the Carlsbad State Beach. This would significantly reduce pedestrian traffic crossing Carlsbad Boulevard.

Alternative #2 is the alignment of Carlsbad Boulevard analyzed as part of the project in the EIR with respect for potential environmental impacts. With Alternative #2, the southbound lanes would be shifted to the east, thereby providing additional area on the west side of Carlsbad Boulevard for on-street parking and an enhanced multi-purpose trail.

Two traffic lanes (12 feet each) would be provided in each direction along with northbound and southbound dedicated left turn lanes (12 feet each). The median would be 18 feet allowing for adequate width for u-turning movements along Carlsbad Boulevard to access the beachfront parking. The wide median would also allow for enhanced landscaping that would be cohesive with the landscaping and design to the north, completed as part of the Hanover Colony.

Parking along Carlsbad Boulevard would be maintained with a total of 61 proposed diagonal parking spaces and 48 parallel parking spaces. Diagonal parking spaces would be separated from the flow of traffic along Carlsbad Boulevard by a raised median.

5.6.4 Mitigation Measures

According to the peak hour roadway segment operating conditions, all roadway segments are forecast to operate at acceptable levels of service without or with the proposed land uses included in the Ponto Beachfront Village Vision Plan. Therefore, no mitigation is required.

As analyzed in Section 5.6.3, implementation of the proposed Ponto Beachfront Village Vision Plan would significantly impact two intersections under Existing Plus Vision Plan and 2030 With Vision Plan conditions. The intersections that would be significantly impacted include:

- La Costa Avenue / Vulcan Avenue; and,
- La Costa Avenue / Carlsbad Boulevard.

5.6.4.1 Mitigation Measures for Significantly Impacted Intersections

The following mitigation measures are required to mitigate the significant intersection impacts of the proposed project:

T-1: Impacts to the affected intersections shall be mitigated by implementation of the following improvements:

- La Costa Avenue / Vulcan Avenue: Alternative 1: Install traffic signal (with La Costa widening to four lanes) or Alternative 2: Restrict left turn access.

The City of Carlsbad shall update the City's Capital Improvement Program (CIP) to include the improvements listed in Mitigation Measure T-1. The CIP shall determine the timing of the intersection improvements, which shall be based on triggering mechanisms and/or thresholds to be identified in the CIP. Future developers within the Ponto Beachfront Village shall be required to make a proportionate fair share contribution towards the improvements listed in Mitigation Measure T-1. The payment of fees shall be secured and recorded by the

City Engineer prior to issuance of demolition, grading, and/or building permits and to the satisfaction of the City of Carlsbad Director of Public Works.

T-2: Impacts to the affected intersections shall be mitigated by implementation of the following improvements:

- La Costa Avenue / Carlsbad Boulevard: Widen north leg to include two left turn lanes and two through lanes, and widen east leg to include two left turn lanes and one right turn lane.

The City of Carlsbad shall update the City's Capital Improvement Program (CIP) to include the improvements listed in Mitigation Measure T-2. The CIP shall determine the timing of the intersection improvements, which shall be based on triggering mechanisms and/or thresholds to be identified in the CIP. Future developers within the Ponto Beachfront Village shall be required to make a proportionate fair share contribution towards the improvements listed in Mitigation Measure T-2. The payment of fees shall be secured and recorded by the City Engineer prior to issuance of demolition, grading, and/or building permits and to the satisfaction of the City of Carlsbad Director of Public Works.

5.6.5 Impact After Mitigation

5.6.5.1 Impact after Mitigation for Significantly Impacted Intersections

With the implementation of the mitigation measures T-1 and T-2, the proposed project would have less than significant impacts on the study area intersections. Table 5.6-10 demonstrates that the proposed mitigation would reduce the anticipated delay at the impacted intersections. The LOS associated with the deficient intersections would meet the LOS criteria established by the City of Carlsbad Growth Improvement Plan and the regional requirements set by SANTEC/ITE. Therefore, direct impacts to intersections would be considered less than significant with mitigation.

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Table 5.6-1
Existing Conditions – Peak Hour Intersection LOS (ICU Methodology)

INTERSECTION	Existing			
	AM		PM	
	V/C	LOS	V/C	LOS
Palomar Airport Road / Avenida Encinas	0.614	B	0.790	C
Palomar Airport Road / I-5 SB Ramps	0.529	A	0.503	A
Palomar Airport Road / I-5 NB Ramps	0.752	C	0.736	C
Palomar Airport Road / Paseo Del Norte	0.711	C	0.859	D
Palomar Airport Road / Armada Drive	0.505	A	0.772	C
Palomar Airport Road / Hidden Valley Road	0.507	A	0.729	C
Palomar Airport Road / College Boulevard	0.491	A	0.786	C
Palomar Airport Road / Camino Vida Roble	0.596	A	0.622	B
Palomar Airport Road / El Camino Real	0.680	B	0.857	D
Palomar Airport Road / El Fuerte St.	0.871	D	0.723	C
Palomar Airport Road / Melrose Drive	0.685	B	0.831	D
Carlsbad Boulevard / Island Way	0.316	A	0.399	A
Carlsbad Boulevard / Breakwater Road	0.318	A	0.391	A
Carlsbad Boulevard / Poinsettia Lane	0.510	A	0.492	A
Poinsettia Lane / Avenida Encinas	0.431	A	0.646	B
Poinsettia Lane / I-5 SB Ramps	0.476	A	0.654	B
Poinsettia Lane / I-5 NB Ramps	0.639	B	0.582	A
Poinsettia Lane / Paseo Del Norte	0.552	A	0.796	C
Paseo Del Norte / Camino del las Ondas	0.483	A	0.412	A
Poinsettia Lane / Batiquitos Drive	0.625	B	0.553	A
Poinsettia Lane / Aviara Parkway	0.453	A	0.595	A
El Camino Real / Cassia Road	0.533	A	0.539	A
El Camino Real / Camino Vida Roble	0.413	A	0.539	A
Carlsbad Boulevard / Ponto Drive	0.344	A	0.378	A
<i>Carlsbad Boulevard / Beach Way (Future)</i>	--	--	--	--
Carlsbad Boulevard / Avenida Encinas	0.400	A	0.395	A
<i>Ponto Drive / Avenida Encinas</i>	--	--	--	--
La Costa Avenue / Carlsbad Boulevard	0.581	A	0.629	B
<i>La Costa Avenue / Vulcan Avenue</i>	27.8	D	21.0	C
La Costa Avenue / I-5 SB Ramps	0.539	A	0.571	A
La Costa Avenue / I-5 NB Ramps	0.606	B	0.594	A
La Costa Avenue / Piraeus St.	0.542	A	0.533	A
El Camino Real / La Costa Avenue	0.866	D	0.711	C
Carlsbad Boulevard / Leucadia Avenue	0.599	A	0.756	C

Italic - Unsignalized Intersection. Deficient intersections shown in **BOLD**.

**Table 5.6-2
Existing Conditions – Peak Hour Roadway Segment LOS**

Location		Direction (Lanes)	Capacity	A.M.			P.M.		
				Volume	V/C	LOS	Volume	V/C	LOS
Carlsbad Blvd.	Palomar Airport Road to Island Way	NB (2)	3,600	357	0.10	A	836	0.23	A
		SB (2)	3,600	801	0.22	A	801	0.22	A
	Island Way to Breakwater Road	NB (2)	3,600	362	0.10	A	842	0.23	A
		SB (2)	3,600	786	0.22	A	760	0.21	A
	Breakwater Road to Poinsettia Lane	NB (2)	3,600	354	0.10	A	888	0.25	A
		SB (2)	3,600	783	0.22	A	789	0.22	A
	Poinsettia Lane to Ponto Drive	NB (2)	3,600	364	0.10	A	905	0.25	A
		SB (2)	3,600	791	0.22	A	780	0.22	A
	Ponto Drive to Beach Way	NB (2)	3,600	280	0.08	A	903	0.25	A
		SB (2)	3,600	854	0.24	A	723	0.20	A
	Beach Way to Avenida Encinas	NB (2)	3,600	367	0.10	A	849	0.24	A
		SB (2)	3,600	915	0.25	A	714	0.20	A
	Avenida Encinas to La Costa Avenue	NB (2)	3,600	493	0.14	A	1,012	0.28	A
		SB (2)	3,600	1,102	0.31	A	902	0.25	A
Avenida Encinas	Cannon Road to Palomar Airport Road	NB (2)	3,600	462	0.13	A	495	0.14	A
		SB (2)	3,600	247	0.07	A	475	0.13	A
	Palomar Airport to Poinsettia Lane	NB (1)	1,800	178	0.10	A	549	0.31	A
		SB (1)	1,800	370	0.21	A	306	0.17	A
	Poinsettia Lane to Windrose Circle	NB (2)	3,600	326	0.09	A	612	0.17	A
		SB (2)	3,600	456	0.13	A	554	0.15	A
	Windrose Circle to Carlsbad Boulevard	NB (1)	1,800	147	0.08	A	197	0.11	A
		SB (1)	1,800	208	0.11	A	222	0.12	A
College Blvd.	El Camino Real to Palomar Airport Road	NB (2)	3,600	895	0.25	A	364	0.10	A
		SB (2)	3,600	204	0.06	A	868	0.24	A
Aviara Pkw.	Palomar Airport Road to Poinsettia Lane	NB (2)	3,600	723	0.20	A	385	0.11	A
		SB (2)	3,600	201	0.06	A	705	0.20	A
	Poinsettia Lane to Batiquitos Drive	NB (2)	3,600	524	0.15	A	549	0.15	A
		SB (2)	3,600	387	0.11	A	855	0.24	A
Paseo del Norte	Cannon Road to Palomar Airport Road	NB (2)	3,600	459	0.13	A	714	0.20	A
		SB (2)	3,600	287	0.08	A	684	0.19	A

Table 5.6-2 continued

Location		Direction (Lanes)	Capacity	A.M.			P.M.		
				Volume	V/C	LOS	Volume	V/C	LOS
Paseo del Norte	Camino Del Parque to Camino del Las Ondas	NB (1)	1,800	411	0.23	A	595	0.33	A
		SB (1)	1,800	271	0.15	A	507	0.28	A
	Camino del Las Ondas to Poinsettia Lane	NB (1)	1,800	46	0.03	A	27	0.02	A
		SB (1)	1,800	28	0.02	A	61	0.03	A
El Camino Real	Faraday Avenue to Palomar Airport Road	NB (3)	5,400	1,488	0.28	A	1,433	0.27	A
		SB (3)	5,400	1,279	0.24	A	1,751	0.32	A
	Palomar Airport Road to Camino Vida Roble	NB (3)	5,400	1,029	0.19	A	1,480	0.27	A
		SB (3)	5,400	1,336	0.25	A	1,267	0.23	A
	Camino Vida Roble to Cassia Road	NB (2)	3,600	1,242	0.35	A	1,168	0.32	A
		SB (3)	5,400	1,178	0.22	A	1,396	0.26	A
	Cassia Road to La Costa Avenue	NB (3)	5,400	1,352	0.25	A	2,038	0.38	A
		SB (2)	3,600	1,843	0.51	A	1,972	0.55	A
Palomar Airport Road	Avenida Encinas to I-5	EB (3)	5,400	591	0.11	A	1,089	0.20	A
		WB (3)	5,400	842	0.16	A	817	0.15	A
	I-5 to Paseo del Norte	EB (3)	5,400	2,428	0.45	A	1,708	0.32	A
		WB (3)	5,400	1,075	0.20	A	2,598	0.48	A
	Paseo del Norte to Armada Drive	EB (3)	5,400	2,365	0.44	A	1,662	0.31	A
		WB (3)	5,400	1,044	0.19	A	2,494	0.46	A
	Armada Drive to Hidden Valley Road	EB (3)	5,400	2,366	0.44	A	1,544	0.29	A
		WB (3)	5,400	1,306	0.24	A	2,211	0.41	A
	Hidden Valley Road to College Boulevard	EB (3)	5,400	2,321	0.43	A	1,493	0.28	A
		WB (3)	5,400	1,299	0.24	A	2,145	0.40	A
	College Boulevard to Camino Vida Roble	EB (3)	5,400	1,509	0.28	A	1,407	0.26	A
		WB (3)	5,400	1,017	0.19	A	1,632	0.30	A
	Camino Vida Roble to El Camino Real	EB (3)	5,400	1,122	0.21	A	1,469	0.27	A
		WB (3)	5,400	1,209	0.22	A	1,260	0.23	A
	El Camino Real to El Fuerte Street	EB (3)	5,400	1,620	0.30	A	3,141	0.58	A
		WB (3)	5,400	2,612	0.48	A	1,630	0.30	A
Poinsettia Lane	Carlsbad Boulevard to Avenida Encinas	EB (2)	3,600	198	0.06	A	329	0.09	A
		WB (2)	3,600	534	0.15	A	397	0.11	A

Table 5.6-2 continued

Location		Direction (Lanes)	Capacity	A.M.			P.M.		
				Volume	V/C	LOS	Volume	V/C	LOS
Poinsettia Lane	Avenida Encinas to I-5	EB (2)	3,600	483	0.13	A	882	0.25	A
		WB (2)	3,600	1,015	0.28	A	795	0.22	A
	I-5 to Paseo del Norte	EB (2)	3,600	1,010	0.28	A	1,440	0.40	A
		WB (2)	3,600	1,092	0.30	A	1,243	0.35	A
	Paseo Del Norte to Batiquitos Drive	EB (2)	3,600	871	0.24	A	1,109	0.31	A
		WB (2)	3,600	824	0.23	A	970	0.27	A
	Batiquitos Drive to Aviara Parkway	EB (2)	3,600	767	0.21	A	807	0.22	A
		WB (2)	3,600	419	0.12	A	793	0.22	A
	Aviara Parkway to Cassia Road	EB (2)	3,600	54	0.02	A	110	0.03	A
		WB (2)	3,600	91	0.03	A	82	0.02	A
La Costa Ave.	Carlsbad Boulevard to Vulcan Avenue	EB (1)	1,800	356	0.20	A	475	0.26	A
		WB (1)	1,800	528	0.29	A	465	0.26	A
	Vulcan Avenue to I-5	EB (1)	1,800	434	0.24	A	515	0.29	A
		WB (1)	1,800	632	0.35	A	523	0.29	A
	I-5 to Piraeus Street	EB (2)	3,600	1,388	0.39	A	1,379	0.38	A
		WB (2)	3,600	1,102	0.31	A	1,250	0.35	A
	Piraeus Street to El Camino Real	EB (2)	3,600	1,081	0.30	A	1,356	0.38	A
		WB (2)	3,600	1,109	0.31	A	1,153	0.32	A
	East of El Camino Real	EB (2)	3,600	377	0.10	A	850	0.24	A
		WB (2)	3,600	729	0.20	A	644	0.18	A
Ponto Drive	Carlsbad Boulevard to Avenida Encinas	EB (1)	1,800	37	0.02	A	27	0.01	A
		WB (1)	1,800	19	0.01	A	41	0.02	A

Note: Deficient roadway segment operation shown in **bold**. (#) Number of lanes.

**Table 5.6-3
Existing General Plan Land Use Trip Generation**

GP Land Use	Units	Amount	ADT
T-R Travel/Recreation Commercial ¹	ac	1.24	372
RMH/T-R Residential Medium High OR Travel/Recreation Commercial			
Travel/Recreation Commercial ²	ac	8.75	3,500
Residential Medium High ³	du	100	800
RMH Residential Medium High ³	du	48	384
UA Unplanned Area			
Travel/Recreation Commercial ⁴	sf	58,000	2320
NC Neighborhood Commercial ⁴	sf	61,000	7,320
RMH Residential Medium High ⁴	du	44	352
T-R Travel/Recreation Commercial ⁵	ac	11.6	1160
Total Daily Trips			from 12,708
			to 15,408

¹Hotel w/ conference facilities

²Specialty Retail

³11.5 dwelling units/acre per Growth Management control point

⁴Per LFMP Zone 9

⁵Resort Hotel

**Table 5.6-4
Ponto Beachfront Village Vision Plan Forecast Traffic**

Area	Land Use	Units	Amount	ADT	AM Peak			PM Peak		
					Total	In	Out	Total	In	Out
Area A	Hotel w/conference facilities/restaurant	ROOM	215	2,150	129	77	52	172	103	69
Area B	Specialty Retail	KSF	6	240	7	4	3	22	11	11
Area C	Hotel Units	ROOM	216	2,160	130	78	52	173	104	69
Area D	Apartments	DU	24	144	12	2	9	13	9	4
	Live/work Units	DU	9	72	6	1	5	7	5	2
Area E	Resort	ROOM	126	1,008	50	30	20	71	28	43
	Hotel w/ 5,000 sf banquet facilities	ROOM	180	1,800	108	65	43	144	86	58
Area F	Town homes (Condos)	DU	128	1,024	82	16	66	102	72	31
	Specialty Retail	KSF	9.25	370	11	7	4	33	17	17
	Flex Restaurant/Retail	KSF	23.3	3,728	298	149	149	298	179	119
Area G	Park (Developed)	ACRE	0.75	15	2	1	1	1	1	1
Area H	Hotel	ROOM	53	530	32	19	13	42	25	17
	Specialty Retail	KSF	12	480	14	9	6	43	22	22
	Restaurant - Sit-Down, high turnover	KSF	5	800	64	32	32	64	38	26
Area I	Specialty Retail	KSF	16	640	19	12	8	58	29	29
TOTAL				15,161	964	502	462	1,244	729	518

**Table 5.6-5
Existing Plus Vision Plan Peak Hour Intersection LOS (ICU)**

INTERSECTION	Existing				Existing + Vision Plan				Change in V/C	
	AM		PM		AM		PM		AM	PM
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
Palomar Airport Rd / Avenida Encinas	0.614	B	0.790	C	0.623	B	0.800	C	0.009	0.010
Palomar Airport Rd / I-5 SB Ramps	0.529	A	0.503	A	0.530	A	0.504	A	0.001	0.001
Palomar Airport Rd / I-5 NB Ramps	0.752	C	0.736	C	0.753	C	0.742	C	0.001	0.006
Palomar Airport Rd / Paseo Del Norte	0.711	C	0.859	D	0.711	C	0.863	D	0.000	0.004
Palomar Airport Rd / Armada Dr	0.505	A	0.772	C	0.505	A	0.772	C	0.000	0.000
Palomar Airport Rd / Hidden Valley Rd	0.507	A	0.729	C	0.529	A	0.730	C	0.022	0.001
Palomar Airport Rd / College Blvd	0.491	A	0.786	C	0.491	A	0.801	D	0.000	0.015
Palomar Airport Rd / Camino Vida Roble	0.596	A	0.622	B	0.596	A	0.622	B	0.000	0.000
Palomar Airport Rd / El Camino Real	0.680	B	0.857	D	0.680	B	0.861	D	0.000	0.004
Palomar Airport Rd / El Fuerte St	0.871	D	0.723	C	0.873	D	0.725	C	0.002	0.002
Palomar Airport Rd / Melrose Dr	0.685	B	0.831	D	0.686	B	0.833	D	0.001	0.002
Carlsbad Blvd / Island Way	0.316	A	0.399	A	0.328	A	0.407	A	0.012	0.008
Carlsbad Blvd / Breakwater Rd	0.318	A	0.391	A	0.331	A	0.399	A	0.013	0.008
Carlsbad Blvd / Poinsettia Ln	0.510	A	0.492	A	0.641	B	0.749	C	0.131	0.257
Poinsettia Ln / Avenida Encinas	0.431	A	0.646	B	0.519	A	0.747	C	0.088	0.101
Poinsettia Ln / I-5 SB Ramps	0.476	A	0.654	B	0.625	B	0.844	D	0.149	0.190
Poinsettia Ln / I-5 NB Ramps	0.639	B	0.582	A	0.730	C	0.705	C	0.091	0.123
Poinsettia Ln / Paseo Del Norte	0.552	A	0.796	C	0.577	A	0.847	D	0.025	0.051
Paseo Del Norte / Camino del las Ondas	0.483	A	0.412	A	0.506	A	0.440	A	0.023	0.028
Poinsettia Ln / Batiquitos Dr	0.625	B	0.553	A	0.640	B	0.570	A	0.015	0.017
Poinsettia Ln / Aviara Parkway	0.453	A	0.595	A	0.463	A	0.624	B	0.010	0.029
El Camino Real / Cassia Rd	0.533	A	0.539	A	0.538	A	0.600	B	0.005	0.061
El Camino Real / Camino Vida Roble	0.413	A	0.539	A	0.415	A	0.541	A	0.002	0.002
Carlsbad Blvd / Ponto Dr	0.344	A	0.378	A	0.479	A	0.618	B	0.135	0.240
<i>Carlsbad Blvd / Beach Way (Future)</i>	--	--	--	--	0.232	A	0.273	A	0.232	0.273
Carlsbad Blvd / Avenida Encinas	0.400	A	0.395	A	0.460	A	0.522	A	0.060	0.127
<i>Ponto Dr / Avenida Encinas</i>	--	--	--	--	11.9	B	14.6	B	--	--
La Costa Ave / Carlsbad Blvd	0.581	A	0.629	B	0.599	A	0.753	C	0.018	0.124
<i>La Costa Ave / Vulcan Ave</i>	27.8	D	21.0	C	67.7	F	43.0	E	39.9	22.0
La Costa Ave / I-5 SB Ramps	0.539	A	0.571	A	0.579	A	0.618	B	0.040	0.047
La Costa Ave / I-5 NB Ramps	0.606	B	0.594	A	0.606	B	0.596	A	0.000	0.002
La Costa Ave / Piraeus St	0.542	A	0.533	A	0.553	A	0.544	A	0.011	0.011
El Camino Real / La Costa Ave	0.866	D	0.711	C	0.877	D	0.711	C	0.011	0.000
Carlsbad Blvd / Leucadia Blvd	0.599	A	0.756	C	0.615	B	0.782	C	0.016	0.026

Italic - Unsignalized Intersection. Deficient intersections shown in **bold**.

**Table 5.6-6
Existing Plus Vision Plan Peak Hour Roadway Segment LOS**

Street	Location	Direction (Lanes)	Capacity	Existing V/C		Existing Plus Vision Plan					
				AM	PM	AM Peak Hour			PM Peak Hour		
						Volume	V/C	LOS	Volume	V/C	LOS
Carlsbad Blvd.	Palomar Airport Road to Island Way	NB (2)	3,600	0.10	0.23	381	0.11	A	863	0.24	A
		SB (2)	3,600	0.22	0.22	845	0.23	A	867	0.24	A
	Island Way to Breakwater Road	NB (2)	3,600	0.10	0.23	386	0.11	A	869	0.24	A
		SB (2)	3,600	0.22	0.21	830	0.23	A	826	0.23	A
	Breakwater Road to Poinsettia Lane	NB (2)	3,600	0.10	0.25	378	0.11	A	915	0.25	A
		SB (2)	3,600	0.22	0.22	827	0.23	A	855	0.24	A
	Poinsettia Lane to Ponto Drive	NB (2)	3,600	0.10	0.25	388	0.11	A	932	0.26	A
		SB (2)	3,600	0.22	0.22	835	0.23	A	846	0.24	A
	Ponto Drive to Beach Way	NB (2)	3,600	0.08	0.25	488	0.14	A	1138	0.32	A
		SB (2)	3,600	0.24	0.20	1078	0.30	A	1059	0.29	A
	Beach Way to Avenida Encinas	NB (2)	3,600	0.10	0.24	448	0.12	A	966	0.27	A
		SB (2)	3,600	0.25	0.20	984	0.27	A	813	0.23	A
	Avenida Encinas to La Costa Avenue	NB (2)	3,600	0.14	0.28	713	0.20	A	1342	0.37	A
		SB (2)	3,600	0.31	0.25	1299	0.36	A	1120	0.31	A
	La Costa Avenue to Leucadia Boulevard	NB (2)	3,600	0.10	0.26	406	0.11	A	1040	0.29	A
		SB (2)	3,600	0.38	0.21	1427	0.40	A	811	0.23	A
Avenida Encinas	Cannon Road to Palomar Airport Road	NB (2)	3,600	0.13	0.14	464	0.13	A	497	0.14	A
		SB (2)	3,600	0.07	0.13	249	0.07	A	479	0.13	A
	Palomar Airport to Poinsettia Lane	NB (1)	1,800	0.10	0.31	181	0.10	A	552	0.31	A
		SB (1)	1,800	0.21	0.17	373	0.21	A	311	0.17	A
	Poinsettia Lane to Windrose Circle	NB (2)	3,600	0.09	0.17	383	0.10	A	672	0.19	A
		SB (2)	3,600	0.13	0.15	514	0.14	A	641	0.17	A

Table 5.6-6 continued

Street	Location	Direction (Lanes)	Capacity	Existing V/C		Existing Plus Vision Plan					
				AM	PM	AM Peak Hour			PM Peak Hour		
						Volume	V/C	LOS	Volume	V/C	LOS
Avenida Encinas	Windrose Circle to Carlsbad Boulevard	NB (1)	1,800	0.08	0.11	321	0.18	A	462	0.26	A
		SB (1)	1,800	0.11	0.12	371	0.21	A	393	0.22	A
College Boulevard	El Camino Real to Palomar Airport Road	NB (2)	3,600	0.25	0.10	909	0.25	A	379	0.11	A
		SB (2)	3,600	0.06	0.24	219	0.06	A	891	0.25	A
Aviara Parkway	Palomar Airport to Poinsettia Lane	NB (2)	3,600	0.20	0.11	723	0.20	A	385	0.11	A
		SB (2)	3,600	0.06	0.20	201	0.06	A	705	0.20	A
	Poinsettia Lane to Batiquitos Drive	NB (2)	3,600	0.15	0.15	529	0.15	A	557	0.15	A
		SB (2)	3,600	0.11	0.24	392	0.11	A	860	0.24	A
Paseo del Norte	Cannon Road to Palomar Airport Road	NB (2)	3,600	0.13	0.20	461	0.13	A	717	0.20	A
		SB (2)	3,600	0.08	0.19	290	0.08	A	688	0.19	A
	Camino Del Parque to Camino del Las Ondas	NB (1)	1,800	0.23	0.33	411	0.23	A	595	0.33	A
		SB (1)	1,800	0.15	0.28	271	0.15	A	507	0.28	A
	Camino del Las Ondas to Poinsettia Lane	NB (1)	1,800	0.03	0.02	46	0.03	A	27	0.02	A
		SB (1)	1,800	0.02	0.03	28	0.02	A	61	0.03	A
El Camino Real	Faraday Avenue to Palomar Airport Road	NB (3)	5,400	0.28	0.27	1,488	0.28	A	1,433	0.27	A
		SB (3)	5,400	0.24	0.32	1,279	0.24	A	1,751	0.32	A
	Palomar Airport Road to Camino Vida Roble	NB (3)	5,400	0.19	0.27	1,038	0.19	A	1,490	0.28	A
		SB (3)	5,400	0.25	0.23	1,346	0.25	A	1,281	0.24	A
	Camino Vida Roble to Cassia Road	NB (2)	3,600	0.35	0.32	1,251	0.35	A	1,178	0.33	A
		SB (3)	5,400	0.22	0.26	1,188	0.22	A	1,410	0.26	A
	Cassia Road to La Costa Avenue	NB (3)	5,400	0.25	0.38	1,352	0.25	A	2,038	0.38	A
		SB (2)	3,600	0.51	0.55	1,843	0.51	B	1,972	0.55	A

Table 5.6-6 continued

Street	Location	Direction (Lanes)	Capacity	Existing V/C		Existing Plus Vision Plan					
				AM	PM	AM Peak Hour			PM Peak Hour		
						Volume	V/C	LOS	Volume	V/C	LOS
Palomar Airport Road	Avenida Encinas to I-5	EB (3)	5,400	0.11	0.20	602	0.11	A	1,101	0.20	A
		WB (3)	5,400	0.16	0.15	872	0.16	A	861	0.16	A
	I-5 to Paseo del Norte	EB (3)	5,400	0.45	0.32	2,430	0.45	A	1,712	0.32	A
		WB (3)	5,400	0.20	0.48	1,079	0.20	A	2,603	0.48	A
	Paseo del Norte to Armada Drive	EB (3)	5,400	0.44	0.31	2,365	0.44	A	1,663	0.31	A
		WB (3)	5,400	0.19	0.46	1,045	0.19	A	2,495	0.46	A
	Armada Drive to Hidden Valley Road	EB (3)	5,400	0.44	0.29	2,366	0.44	A	1,545	0.29	A
		WB (3)	5,400	0.24	0.41	1,307	0.24	A	2,212	0.41	A
	Hidden Valley Road to College Boulevard	EB (3)	5,400	0.43	0.28	2,339	0.43	A	1,514	0.28	A
		WB (3)	5,400	0.24	0.40	1,320	0.24	A	2,176	0.40	A
	College Boulevard to Camino Vida Roble	EB (3)	5,400	0.28	0.26	1,509	0.28	A	1,408	0.26	A
		WB (3)	5,400	0.19	0.30	1,018	0.19	A	1,633	0.30	A
	Camino Vida Roble to El Camino Real	EB (3)	5,400	0.21	0.27	1,122	0.21	A	1,470	0.27	A
		WB (3)	5,400	0.22	0.23	1,210	0.22	A	1,261	0.23	A
	El Camino Real to El Fuerte Street	EB (3)	5,400	0.30	0.58	1,629	0.30	A	3,151	0.58	A
		WB (3)	5,400	0.48	0.30	2,622	0.49	A	1,645	0.30	A
Palomar Airport Road	El Fuerte Street to Melrose Drive	EB (3)	5,400	0.21	0.62	1,136	0.21	A	3,370	0.62	B
		WB (3)	5,400	0.50	0.28	2,691	0.50	A	1,532	0.28	A
Poinsettia Lane	Carlsbad Boulevard to Avenida Encinas	EB (2)	3,600	0.06	0.09	382	0.11	A	536	0.15	A
		WB (2)	3,600	0.15	0.11	714	0.20	A	666	0.19	A
	Avenida Encinas to I-5	EB (2)	3,600	0.13	0.25	717	0.20	A	1,141	0.32	A
		WB (2)	3,600	0.28	0.22	1,246	0.35	A	1,141	0.32	A
	I-5 to Paseo del Norte	EB (2)	3,600	0.28	0.40	1,078	0.30	A	1,516	0.42	A
		WB (2)	3,600	0.30	0.35	1,167	0.32	A	1,355	0.38	A

Table 5.6-6 continued

Street	Location	Direction (Lanes)	Capacity	Existing V/C		Existing Plus Vision Plan					
				AM	PM	AM Peak Hour			PM Peak Hour		
						Volume	V/C	LOS	Volume	V/C	LOS
Poinsettia Lane	Paseo Del Norte to Batiquitos Drive	EB (2)	3,600	0.24	0.31	921	0.26	A	1,165	0.32	A
		WB (2)	3,600	0.23	0.27	879	0.24	A	1,052	0.29	A
	Batiquitos Drive to Aviara Parkway	EB (2)	3,600	0.21	0.22	818	0.23	A	863	0.24	A
		WB (2)	3,600	0.12	0.22	474	0.13	A	876	0.24	A
	Aviara Parkway to Cassia Road	EB (2)	3,600	0.02	0.03	100	0.03	A	161	0.04	A
		WB (2)	3,600	0.03	0.02	141	0.04	A	157	0.04	A
La Costa Avenue	Carlsbad Boulevard to Vulcan Avenue	EB (1)	1,800	0.20	0.26	497	0.28	A	631	0.35	A
		WB (1)	1,800	0.29	0.26	688	0.38	A	705	0.39	A
	Vulcan Avenue to I-5	EB (1)	1,800	0.24	0.29	575	0.32	A	671	0.37	A
		WB (1)	1,800	0.35	0.29	792	0.44	A	763	0.42	A
	I-5 to Piraeus Street	EB (2)	3,600	0.39	0.38	1,425	0.40	A	1,420	0.39	A
		WB (2)	3,600	0.31	0.35	1,142	0.32	A	1,310	0.36	A
	Piraeus Street to El Camino Real	EB (2)	3,600	0.30	0.38	1,118	0.31	A	1,397	0.39	A
		WB (2)	3,600	0.31	0.32	1,149	0.32	A	1,213	0.34	A
	East of El Camino Real	EB (2)	3,600	0.10	0.24	414	0.12	A	891	0.25	A
		WB (2)	3,600	0.20	0.18	769	0.21	A	704	0.20	A
Ponto Drive	Carlsbad Boulevard to Avenida Encinas	EB (1)	1800	0.02	0.01	178	0.10	A	184	0.10	A
		WB (1)	1800	0.01	0.02	162	0.09	A	255	0.14	A

Table 5.6-7
Horizon Year (2030) Peak Hour Intersection LOS - HCM

Intersections	Without Vision Plan				With Vision Plan				Change in Delay	
	AM		PM		AM		PM			
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
Palomar Airport Road / Avenida Encinas	35.6	D	40.7	D	35.7	D	41.0	D	0.1	0.3
Palomar Airport Road / I-5 SB Ramps	20.9	C	16.1	B	20.9	C	16.4	B	0.0	0.3
Palomar Airport Road / I-5 NB Ramps	59.1	E	47.1	D	59.7	E	48.4	D	0.6	1.3
Palomar Airport Road / Paseo Del Norte	36.7	D	44.7	D	36.7	D	44.9	D	0.0	0.2
Palomar Airport Road / Armada Drive	23.7	C	54.3	D	23.7	C	54.3	D	0.0	0
Palomar Airport Road / Hidden Valley Road	16.9	B	16.0	B	17.0	B	16.1	B	0.1	0.1
Palomar Airport Road / College Boulevard	37.8	D	47.7	D	38.7	D	49.5	D	0.8	1.8
Palomar Airport Road / Camino Vida Roble	31.9	C	34.9	C	31.9	C	34.9	C	0.0	0.0
Palomar Airport Road / El Camino Real	64.6	E	119.9	F	64.9	E	121.2	F	0.3	1.3
Palomar Airport Road / El Fuerte St.	65.6	E	45.8	D	66.2	E	46.2	D	0.6	0.4
Palomar Airport Road / Melrose Drive	116.8	F	82.9	F	117.3	F	83.6	F	0.5	0.7
Carlsbad Boulevard / Island Way	8.1	A	7.6	A	8.0	A	7.6	A	-0.1	0.0
Carlsbad Boulevard / Breakwater Road	8.2	A	6.6	A	8.1	A	6.7	A	-0.1	0.1
Carlsbad Boulevard / Poinsettia Lane	20.0	C	26.4	C	27.1	C	53.8	D	7.1	27.4
Poinsettia Lane / Avenida Encinas	32.4	C	37.7	D	34.1	C	41.6	D	2.3	3.9
Poinsettia Lane / I-5 SB Ramps	26.2	C	31.4	C	33.2	C	44.3	D	7.0	12.9
Poinsettia Lane / I-5 NB Ramps	28.7	C	29.0	C	36.9	D	38.8	D	8.2	9.8
Poinsettia Lane / Paseo Del Norte	31.6	C	37.5	D	33.3	C	43.2	D	2.1	5.7
Paseo Del Norte / Camino del las Ondas	31.1	C	27.2	C	32.4	C	28.0	C	1.3	0.8
Poinsettia Lane / Batiquitos Drive	25.3	C	25.2	C	24.7	C	25.0	C	-0.6	-0.2
Poinsettia Lane / Aviara Parkway	30.2	C	33.9	C	30.4	C	34.6	C	0.2	0.7
El Camino Real / Cassia Road	25.3	C	11.8	B	26.5	C	13.7	B	1.2	1.9
El Camino Real / Camino Vida Roble	24.2	C	93.8	F	24.2	C	94.8	F	0.0	1.0
Carlsbad Boulevard / Ponto Drive	7.3	A	5.8	A	16.9	B	19.8	B	9.6	14.0
Carlsbad Boulevard / Beach Way	1.3	A	0.8	A	13.7	B	13.3	B	12.4	12.5
Carlsbad Boulevard / Avenida Encinas	6.7	A	8.0	A	17.2	B	17.0	B	10.5	9.0
Ponto Drive / Avenida Encinas	8.5	A	14.7	B	31.6	C	32.8	C	20.5	17.0
La Costa Avenue / Carlsbad Boulevard	142.5	F	53.6	D	156.8	F	87.0	F	14.3	33.4

Table 5.6-7 continued

Intersections	Without Vision Plan				With Vision Plan				Change in Delay	
	AM		PM		AM		PM			
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
<i>La Costa Avenue / Vulcan Avenue</i>	Overflow	F	Overflow	F	Overflow	F	Overflow	F	Overflow	Overflow
La Costa Avenue / I-5 SB Ramps	27	C	32.1	C	26.1	C	33.0	C	-0.9	0.9
La Costa Avenue / I-5 NB Ramps	26.8	C	24.4	C	26.9	C	25.0	C	0.1	0.6
La Costa Avenue / Piraeus St.	20.6	C	23.1	C	20.9	C	23.9	C	0.3	0.8
El Camino Real / La Costa Avenue	88.5	F	42.0	D	88.4	F	44.3	D	-0.1	2.3
Carlsbad Boulevard / Leucadia Avenue	35.3	D	34.5	C	38.7	D	36.5	D	3.4	2.0

Italic - Unsignalized Intersection.

Deficient Intersections shown in **BOLD**.

Table 5.6-8
Horizon Year (2030) Peak Hour Roadway Segment LOS

Location		Direction (# lanes)	Capacity	2030 No Vision Plan A.M.			2030 No Vision Plan P.M.			2030 With Vision Plan A.M.			2030 With Vision Plan P.M.			Change in Delay	
				Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	AM	PM
Carlsbad Blvd.	Palomar Airport Road to Island Way	NB (2)	3,600	497	0.14	A	1,261	0.35	A	521	0.14	A	1,288	0.36	A	0.00	0.01
		SB (2)	3,600	1,198	0.33	A	1,428	0.40	A	1,242	0.35	A	1,494	0.42	A	0.02	0.02
	Island Way to Breakwater Road	NB (2)	3,600	486	0.14	A	1,279	0.36	A	510	0.14	A	1,306	0.36	A	0.00	0.00
		SB (2)	3,600	1,176	0.33	A	1,364	0.38	A	1,220	0.34	A	1,430	0.40	A	0.01	0.02
	Breakwater Road to Poinsettia Lane	NB (2)	3,600	419	0.12	A	1,220	0.34	A	443	0.12	A	1,247	0.35	A	0.00	0.01
		SB (2)	3,600	1,011	0.28	A	1,158	0.32	A	1,055	0.29	A	1,224	0.34	A	0.01	0.02
	Poinsettia Lane to Ponto Drive	NB (2)	3,600	416	0.12	A	1,248	0.35	A	440	0.12	A	1,275	0.35	A	0.00	0.00
		SB (2)	3,600	1,034	0.29	A	1,176	0.33	A	1,078	0.30	A	1,242	0.35	A	0.01	0.02
	Ponto Drive to Beach Way	NB (2)	3,600	1,332	0.37	A	1,212	0.34	A	1,540	0.43	A	1,447	0.40	A	0.06	0.06
		SB (2)	3,600	1,104	0.31	A	1,930	0.54	A	1,328	0.37	A	2,266	0.63	A	0.06	0.09
	Beach Way to Avenida Encinas	NB (2)	3,600	1,266	0.35	A	913	0.25	A	1,347	0.37	A	1,030	0.29	A	0.02	0.04
		SB (2)	3,600	1,445	0.40	A	1,741	0.48	A	1,514	0.42	A	1,840	0.51	A	0.02	0.03
	Avenida Encinas to La Costa Avenue	NB (2)	3,600	1,634	0.45	A	1,124	0.31	A	1,854	0.52	A	1,454	0.40	A	0.07	0.09
		SB (2)	3,600	1,640	0.46	A	1,930	0.54	A	1,837	0.51	A	2,148	0.60	A	0.05	0.06
	La Costa Avenue to Leucadia Boulevard	NB (2)	3,600	548	0.15	A	1,533	0.43	A	608	0.17	A	1,624	0.45	A	0.02	0.02
		SB (2)	3,600	2,428	0.67	B	1,035	0.29	A	2,483	0.69	B	1,096	0.30	A	0.02	0.01
Avenida Encinas	Cannon Road to Palomar Airport Road	NB (2)	3,600	506	0.14	A	534	0.15	A	508	0.14	A	536	0.15	A	0.00	0.00
		SB (2)	3,600	271	0.08	A	747	0.21	A	273	0.08	A	751	0.21	A	0.00	0.00

Table 5.6-8 continued

Location		Direction (# lanes)	Capacity	2030 No Vision Plan A.M.			2030 No Vision Plan P.M.			2030 With Vision Plan A.M.			2030 With Vision Plan P.M.			Change in Delay	
				Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	AM	PM
Avenida Encinas	Palomar Airport Road to Poinsettia Lane	NB (1)	1,800	289	0.16	A	636	0.35	A	292	0.16	A	639	0.36	A	0.00	0.01
		SB (1)	1,800	579	0.32	A	415	0.23	A	582	0.32	A	420	0.23	A	0.00	0.00
	Poinsettia Lane to Windrose Circle	NB (2)	3,600	685	0.19	A	666	0.19	A	742	0.21	A	726	0.20	A	0.02	0.01
		SB (2)	3,600	396	0.11	A	630	0.18	A	454	0.13	A	717	0.20	A	0.02	0.02
	Windrose Circle to Carlsbad Boulevard	EB (1)	1,800	176	0.10	A	206	0.11	A	351	0.20	A	471	0.26	A	0.10	0.15
		WB (1)	1,800	169	0.09	A	136	0.08	A	331	0.18	A	307	0.17	A	0.09	0.09
College Boulevard	El Camino Real to Palomar Airport Road	NB (2)	3,600	1,498	0.42	A	641	0.18	A	1,512	0.42	A	656	0.18	A	0.00	0.00
		SB (2)	3,600	578	0.16	A	1,405	0.39	A	593	0.16	A	1,428	0.40	A	0.00	0.01
Aviara Parkway	Palomar Airport Road to Poinsettia Lane	NB (2)	3,600	1,151	0.32	A	554	0.15	A	1,151	0.32	A	554	0.15	A	0.00	0.00
		SB (2)	3,600	292	0.08	A	1,146	0.32	A	292	0.08	A	1,146	0.32	A	0.00	0.00
	Poinsettia Lane to Batiquitos Drive	NB (2)	3,600	912	0.25	A	633	0.18	A	917	0.25	A	641	0.18	A	0.00	0.00
		SB (2)	3,600	351	0.10	A	1,158	0.32	A	356	0.10	A	1,163	0.32	A	0.00	0.00
Paseo del Norte	Cannon Road to Palomar Airport Road	NB (2)	3,600	771	0.21	A	707	0.20	A	773	0.21	A	710	0.20	A	0.00	0.00
		SB (2)	3,600	356	0.10	A	927	0.26	A	359	0.10	A	931	0.26	A	0.00	0.00
	Camino del Parque to Camino del Las Ondas	NB (1)	1,800	812	0.45	A	561	0.31	A	812	0.45	A	561	0.31	A	0.00	0.00
		SB (1)	1,800	355	0.20	A	1,243	0.69	B	355	0.20	A	1,243	0.69	B	0.00	0.00
	Camino del Las Ondas to Poinsettia Lane	NB (1)	1,800	143	0.08	A	35	0.02	A	143	0.08	A	35	0.02	A	0.00	0.00
		SB (1)	1,800	31	0.02	A	156	0.09	A	31	0.02	A	156	0.09	A	0.00	0.00
El Camino Real	Faraday Avenue to Palomar Airport Road	NB (3)	5,400	2,781	0.52	A	1,965	0.36	A	2,781	0.52	A	1,965	0.36	A	0.00	0.00
		SB (3)	5,400	2,034	0.38	A	2,479	0.46	A	2,034	0.38	A	2,479	0.46	A	0.00	0.00

Table 5.6-8 continued

Location		Direction (# lanes)	Capacity	2030 No Vision Plan A.M.			2030 No Vision Plan P.M.			2030 With Vision Plan A.M.			2030 With Vision Plan P.M.			Change in Delay	
				Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	AM	PM
El Camino Real	Palomar Airport Road to Camino Vida Roble	NB (3)	5,400	2,192	0.41	A	1,756	0.33	A	2,201	0.41	A	1,766	0.33	A	0.00	0.00
		SB (3)	5,400	1,425	0.26	A	2,206	0.41	A	1,435	0.27	A	2,220	0.41	A	0.00	0.00
	Camino Vida Roble to Cassia Road	NB (3)	5,400	2,819	0.52	A	1,488	0.28	A	2,828	0.52	A	1,498	0.28	A	0.00	0.00
		SB (3)	5,400	1,306	0.24	A	2,930	0.54	A	1,316	0.24	A	2,944	0.55	A	0.00	0.01
	Cassia Road to La Costa Avenue	NB (3)	5,400	3,467	0.64	B	2,594	0.48	A	3,467	0.64	B	2,594	0.48	A	0.00	0.00
		SB (3)	5,400	2,261	0.42	A	3,058	0.57	A	2,261	0.42	A	3,058	0.57	A	0.00	0.00
Palomar Airport Road	Avenida Encinas to I-5	EB (3)	5,400	1,079	0.20	A	1,152	0.21	A	1,090	0.20	A	1,164	0.22	A	0.00	0.01
		WB (3)	5,400	975	0.18	A	1,165	0.22	A	1,005	0.19	A	1,209	0.22	A	0.01	0.00
	I-5 to Paseo del Norte	EB (3)	5,400	2,704	0.50	A	2,151	0.40	A	2,706	0.50	A	2,155	0.40	A	0.00	0.00
		WB (3)	5,400	1,313	0.24	A	3,149	0.58	A	1,317	0.24	A	3,154	0.58	A	0.00	0.00
	Paseo del Norte to Armada Drive	EB (3)	5,400	2,741	0.51	A	1,615	0.30	A	2,741	0.51	A	1,616	0.30	A	0.00	0.00
		WB (3)	5,400	1,308	0.24	A	3,075	0.57	A	1,309	0.24	A	3,076	0.57	A	0.00	0.00
	Armada Drive to Hidden Valley Road	EB (3)	5,400	3,242	0.60	B	2,129	0.39	A	3,242	0.60	B	2,130	0.39	A	0.00	0.00
		WB (3)	5,400	1,766	0.33	A	3,029	0.56	A	1,767	0.33	A	3,030	0.56	A	0.00	0.00
	Hidden Valley Road to College Boulevard	EB (3)	5,400	3,166	0.59	A	2,028	0.38	A	3,184	0.59	A	2,049	0.38	A	0.00	0.00
		WB (3)	5,400	1,781	0.33	A	2,928	0.54	A	1,802	0.33	A	2,959	0.55	A	0.00	0.01
	College Boulevard to Camino Vida Roble	EB (3)	5,400	1,906	0.35	A	1,497	0.28	A	1,906	0.35	A	1,498	0.28	A	0.00	0.00
		WB (3)	5,400	1,168	0.22	A	1,547	0.29	A	1,169	0.22	A	1,548	0.29	A	0.00	0.00
	Camino Vida Roble to El Camino Real	EB (3)	5,400	1,442	0.27	A	1,475	0.27	A	1,442	0.27	A	1,476	0.27	A	0.00	0.00
		WB (3)	5,400	1,239	0.23	A	1,090	0.20	A	1,240	0.23	A	1,091	0.20	A	0.00	0.00

Table 5.6-8 continued

Location		Direction (# lanes)	Capacity	2030 No Vision Plan A.M.			2030 No Vision Plan P.M.			2030 With Vision Plan A.M.			2030 With Vision Plan P.M.			Change in Delay	
				Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	AM	PM
Palomar Airport Road	El Camino Real to El Fuerte Street	EB (3)	5,400	2,341	0.43	A	3,384	0.63	B	2,350	0.44	A	3,394	0.63	A	0.01	0.00
		WB (3)	5,400	3,307	0.61	B	2,332	0.43	A	3,317	0.61	B	2,347	0.43	A	0.00	0.00
	El Fuerte Street to Melrose Drive	EB (3)	5,400	1,921	0.36	A	3,501	0.65	B	1,930	0.36	A	3,511	0.65	A	0.00	0.00
		WB (3)	5,400	3,332	0.62	B	2,277	0.42	A	3,342	0.62	B	2,292	0.42	A	0.00	0.00
Poinsettia Lane	Carlsbad Boulevard to Avenida Encinas	EB (2)	3,600	250	0.07	A	485	0.13	A	434	0.12	A	692	0.19	A	0.05	0.06
		WB (2)	3,600	384	0.11	A	581	0.16	A	564	0.16	A	850	0.24	A	0.05	0.08
	Avenida Encinas to I-5	EB (2)	3,600	801	0.22	A	1,152	0.32	A	1,035	0.29	A	1,411	0.39	A	0.07	0.07
		WB (2)	3,600	830	0.23	A	1,019	0.28	A	1,061	0.29	A	1,365	0.38	A	0.06	0.10
Poinsettia Lane	I-5 to Paseo del Norte	EB (2)	3,600	1,466	0.41	A	1,656	0.46	A	1,534	0.43	A	1,732	0.48	A	0.02	0.02
		WB (2)	3,600	1,463	0.41	A	1,644	0.46	A	1,538	0.43	A	1,756	0.49	A	0.02	0.03
	Paseo Del Norte to Batiquitos Drive	EB (2)	3,600	877	0.24	A	1,190	0.33	A	927	0.26	A	1,246	0.35	A	0.02	0.02
		WB (2)	3,600	1,110	0.31	A	1,199	0.33	A	1,165	0.32	A	1,281	0.36	A	0.01	0.03
	Batiquitos Drive to Aviara Parkway	EB (2)	3,600	1,198	0.33	A	994	0.28	A	1,249	0.35	A	1,050	0.29	A	0.02	0.01
		WB (2)	3,600	751	0.21	A	1,286	0.36	A	806	0.22	A	1,369	0.38	A	0.01	0.02
	Aviara Parkway to El Camino Real	EB (2)	3,600	564	0.16	A	495	0.14	A	610	0.17	A	546	0.15	A	0.01	0.01
		WB (2)	3,600	415	0.12	A	720	0.20	A	465	0.13	A	795	0.22	A	0.01	0.02
La Costa Ave.	Carlsbad Boulevard to Vulcan Avenue	EB (1)	1,800	850	0.47	A	1,000	0.56	A	991	0.55	A	1,156	0.64	B	0.08	0.08
		WB (1)	1,800	945	0.53	A	798	0.44	A	1,105	0.61	B	1,038	0.58	A	0.08	0.14
	Vulcan Avenue to I-5	EB (1)	1,800	945	0.53	A	922	0.51	A	1,086	0.60	A	1,078	0.60	A	0.07	0.09
		WB (1)	1,800	1,256	0.70	B	2,156	1.20	F	1,416	0.79	C	2,396	1.33	F	0.09	0.13

Table 5.6-8 continued

Location		Direction (# lanes)	Capacity	2030 No Vision Plan A.M.			2030 No Vision Plan P.M.			2030 With Vision Plan A.M.			2030 With Vision Plan P.M.			Change in Delay	
				Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	AM	PM
La Costa Ave.	I-5 to Piraeus Street	EB (2)	3,600	2,002	0.56	A	2,100	0.58	A	2,039	0.57	A	2,141	0.59	A	0.01	0.01
		WB (2)	3,600	2,042	0.57	A	2,148	0.60	A	2,082	0.58	A	2,208	0.61	A	0.01	0.01
	Piraeus Street to El Camino Real	EB (2)	3,600	1,822	0.51	A	1,523	0.42	A	1,859	0.52	A	1,564	0.43	A	0.01	0.01
		WB (2)	3,600	1,370	0.38	A	1,412	0.39	A	1,410	0.39	A	1,472	0.41	A	0.01	0.02
	East of El Camino Real	EB (2)	3,600	536	0.15	A	1,035	0.29	A	573	0.16	A	1,076	0.30	A	0.01	0.01
		WB (2)	3,600	1,065	0.30	A	809	0.22	A	1,105	0.31	A	869	0.24	A	0.01	0.02
Ponto Drive	Carlsbad Boulevard to Avenida Encinas	NB (1)	1,800	27	0.02	A	15	0.01	A	167	0.09	A	172	0.10	A	0.07	0.09
		SB (1)	1,800	23	0.01	A	43	0.02	A	166	0.09	A	257	0.14	A	0.08	0.12

Note: Deficient roadway segment operation shown in **bold**. (#) Number of lanes.

**Table 5.6-9
ILV Operation Analysis**

		PAR/ I-5 SB Ramps	PAR/ I-5 NB Ramps	Poinsettia Ln/I-5 SB Ramps	Poinsettia Ln/ I-5 NB Ramps	La Costa Ave/ I-5 SB Ramps	La Costa Ave/ I-5 NB Ramps
Existing Conditions	a.m.	731 Stable	1232 Unstable	722 Stable	794 Stable	717 Stable	881 Stable
	p.m.	743 Stable	1186 Stable	1016 Stable	917 Stable	744 Stable	893 Stable
Existing with Vision Plan	a.m.	732 Stable	1241 Unstable	913 Stable	973 Stable	797 Stable	899 Stable
	p.m.	745 Stable	1196 Stable	1364 Unstable	1125 Stable	810 Stable	913 Stable
2010	a.m.	940 Stable	1333 Unstable	1002 Stable	1003 Stable	705 Stable	964 Stable
	p.m.	891 Stable	1271 Unstable	1065 Stable	1156 Stable	912 Stable	983 Stable
2010 with Vision Plan	a.m.	942 Stable	1342 Unstable	1193 Stable	1182 Stable	785 Stable	983 Stable
	p.m.	897 Stable	1282 Unstable	1413 Unstable	1364 Unstable	932 Stable	1078 Stable
2030	a.m.	1011 Stable	1531 Capacity	1052 Stable	1031 Stable	623 Stable	1118 Stable
	p.m.	1057 Stable	1409 Unstable	1147 Stable	1193 Stable	1144 Stable	1287 Unstable
2030 with Vision Plan	a.m.	1012 Stable	1540 Capacity	1243 Unstable	1210 Unstable	703 Stable	1137 Stable
	p.m.	1063 Stable	1420 Unstable	1387 Unstable	1401 Unstable	1165 Stable	1308 Unstable

Note: PAR – Palomar Airport Road.

Table 5.6-10
Recommended Mitigation Measures for Significantly Impacted Intersections

Intersection	Forecast Deficient Intersections					
	Significantly Impacted Scenarios	Worst Case		Recommended Mitigation	Mitigated	
		Delay	LOS		Delay	LOS
La Costa Ave / Carlsbad Blvd	2030	33.4	F	Widen North Leg to Include: 2 Left Turn Lanes and 2 Thru Lanes, and Widen East Leg to Include: 2 Left Turn Lanes and 1 Right Turn Lane	44.8	D
La Costa Ave / Vulcan Ave	Existing, 2010 & 2030	711.1	F	Alternative 1: Install Traffic Signal (with La Costa Widening to 4 lanes) Alternative 2: Restrict Left Turn Access	35.0	C

**Figure 5.6-1
Study Intersections**

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**Figure 5.6-2
Existing ADT Volumes**

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**Figure 5.6-3
Existing AM Level of Service**

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**Figure 5.6-4
Existing PM Level of Service**

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**Figure 5.6-5
Trip Distribution**

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Figure 5.6-6
Existing with Vision Plan AM Level of Service

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Figure 5.6-7
Existing with Vision Plan PM Level of Service

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Figure 5.6-8
Horizon Year (2030) ADT Volumes

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Figure 5.6-9
Horizon Year (2030) with Vision Plan ADT Volumes

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Figure 5.6-10
Horizon Year (2030) with Vision Plan AM Level of Service

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Figure 5.6-11
Horizon Year (2030) with Vision Plan PM Level of Service

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